PUERTO RICO

1942 Plan of Work of Pedro Osuna

Extension Horticulturist

1. Situation and Trends:

The Island of Puerto Rico is not self-sufficient in the matter of food production for its present population. According to the 1940 census, the population of the Island was 1,869,255. From a study made by the Agricultural Experiment Station of the University of Puerto Rico we find that for the year 1937-38 the production of foodstuffs in the Island for its population was only 65 percent of the amount necessary, (Bulletin No. 55; The Food Supply of Puerto Rico). It produced all its sugar and coffee and practically all its fruits; about 80 percent of its starchy vegetables, green and leafy vegetables and eggs; 68 percent of its dairy products and one-half of the meat consumed. It depended entirely on outside sources for its consumption of the fats and oils, and the cereals and cereal preparations. It also imported 89 percent of the fish and 60 percent of the legumes consumed, beans and peas mostly. The following table, compiled from figures taken from a mimeographed report of the U.S.D.A."War Board Production Goals for 1942, Puerto Rico," gives an idea of the Island's production and imports of foodstuffs based on 1940 census:

Product	Island's Production (lbs.)	Imports (lbs.)	Percent of Imports	Total Consumption (lbs.)
Cereals	11,000,000	374,000,000	97.142	385,000,000
Starchy vegetables	517,000,000	53,000,000	9,298	570,000,000
Green, leafy, and yellow vegetables	59,000,000	28,000,000	32.18	87,000,000
Fruits and preparations	238,000,000	17,000,000	6.66	255,000,000
Legumes	36,000,000	49,000,000	57.64	85,000,000
Milk & equivalents	211,000,000	13,000,000	5.803	224,000,000
Oils and fats	1,000,000	62,000,000	98.41	63,000,000
Lean meats	39,000,000	23,000,000	37.10	62,000,000
Fish	4,000,000	33,000,000	89.19	37,000,000
Eggs (dozens)	7,500,000	1,100,000	12.79	8,600,000

In a general way there is very little difference in the percentage figures between the 1937-1938 and those of 1940; and both clearly show that the Island's food production is not enough for its population and that it has been depending to a great extent on imports from the United States.

At the present time there is an emergency. Transportation facilities to and from the mainland are being interrupted and the imports of foodstuffs and other materials are not flowing down by boat as they used to. We must produce food crops to supply our needs. The Extension Service in 1941 intensified a campaign, which had been started for some years for the production of all foods as mentioned in the above table. It is clearly seen that all horticultural crops - fruits and vegetables - are included in the list. These must be produced to supply the needs of the home and the local market. It is one of the most important activities undertaken by the Extension Service as a part of National Defense.

The consumption of the green, leafy and yellow vegetables is not what it should be. The rural population of the Island is not as yet accustomed to eat more of them. Comparing the figures of this kind of vegetables with those of the starchy vegetables in the above table, it shows that they are only about 15 percent of the latter. Special attention must be given to this fact so as to increase the production and consumption of these crops in home gardens throughout the Island since they are the leading sources of vitamins and mineral so important for the nutrition and health of our bodies.

The growing of vegetables to supply the local market throughout the year must be intensified. The consumption of both green and starchy vegetables will be increased locally in view of a possible reduction of imported food stuffs from the mainland. All that is being produced for this purpose is readily used up and it is not enough under normal condition. In case of an emergency the situation will surely become worse. Problems of production as observed during the discussions at planning committee meetings were mainly those of seed and fertilizers, labor shortage and plant diseases. Solution of problems and higher production are urgent.

The encouragement of truck gardening to ship the produce to continental markets will be done rather cautiously. The farmers have to be made aware of the fact that there are serious problems to meet. One of them is transportation. The sinking of ships which connect the Island with the mainland by enemy U-boats may cause great losses to them. A second problem is that of the labor situation in relation to higher wages. Many workers from rural areas have moved to work in defense projects of the Federal Government in the Island. Others have been called to Military Service. Many of those remaining have not the training in vegetable growing. These factors will tend toward increased costs in the production of the crops. A third problem is that of insect pests and diseases. It is one of the most serious problems with which commercial growers have to deal in Puerto Rico. The supply of spray pumps and spraying material has been limited by priority requirements. This will necessarily make it more difficult to control the pests and diseases, which in turn will reduce crops to a great extent.

There are four vegetable growers' cooperative associations engaged in truck gardening. During the 1940-41 season they had a total active membership of 468. The special crops grown by them for distant markets were tomatoes, cucumbers and peppers, of which 835,75 "cuerdas," (one "cuerda"- 0.97 acre), were planted last year. There were approximately 1,372 farmers outside of cooperatives who cultivated 3,482.25 "cuerdas"of the above truck crops. Truck gardening, as an activity, is relatively of recent development and the number of farmers engaged in it increases slowly every year. Great care must be exercised this coming year to avoid failures among them.

There are in Puerto Rico large varieties of native fruits of excellent quality and flavor besides the commercial varieties of citrus and pineapples, custard-apple, star-apple, sapotilla, guava, soursop and others. There is scarcely a farm in the Island where one or more varieties of these fruit trees could not be found. They are found either near the home, down in the lowlands or up on the hills, in most cases neglected, and still bearing some fruit. They can be brought to bear better fruit again by careful weeding and cleaning out, pruning, fertilizing and mulching. The Extension Service has been encouraging these practices so that the farm families may have more fruits for the home, especially at this time of National emergency.

Another thing very uncommon in Puerto Rico is the farm orchard. As already stated, one can find scattered fruit trees throughout most of the farms in the Island but hardly ever is found a lot of land devoted especially to fruit trees of all kinds for home consumption. The propagation of commercial and native fruits is necessary for the establishment of farm orchards. The 4-H club boys can do a great deal of this work in their projects. Young trees must be ready to replace old ones that may die or are destroyed by hurricanes or other means.

Home ground improvement is very necessary in Puerto Rico to make things attractive around the home, especially for young people in rural areas. The Extension Service has been doing a great deal of work in this line of activity among 4-H club boys and girls through the extension agents and home demonstration agents. During the Extension year 1940-41, 556 4-H club girls enlisted to conduct projects in home ground improvement, and thousands of ornamental plants and shrubberies were distributed by the demonstration farms of the Extension Service to aid the boys and girls in their home ground improvement projects. Yet this is only a very small amount of the work that must be done. Even though we are at the present time facing serious problems and doing everything possible to solve them for defense, this work must not be neglected.

In an Island like Puerto Rico where climatic conditions are so favorable for the establishment of permanent and attractive home surroundings in the rural districts it is very rare to find people who have really taken advantage of such conditions. It is very common, as one travels along our main roads, to see country homes without shrubberies or trees or grass around them. At times one may see places where many things have been planted without any special design, and the homes are so covered up they can hardly be seen. The two extremes are bad. Every country home should have its lawn, hedges and color shrubbery and trees so arranged around it as to reduce the glare of the tropical sun, give part shade to the home and provide windbreaks. These factors help to make things more attractive to the family and develop a desire to be more at home, especially the young people. The least that we should do during the period of National emergency is to continue all projects already begun and to care for all those already finished.

II. Adjustments and Remedies:

A. The present conflict has brought about many new problems in all lines of activities. As far as our agricultural Extension program is concerned we have been making all necessary changes to conform with the new situation and contribute the most for defense. Food production is our "Number 1 Job," and this is most urgent in an Island like Puerto Rico where so much foodstuff was being imported from outside sources, and the amount produced never was enough for its population. The raising of all food crops for the home, the local markets, and to feed domestic animals will be encouraged most.

B. Major farm, home, community, or State problems. Recommended Practices:

1. Food production:

(a) The home vegetable garden

(1) To supply the home with fresh and wholesome food the year round.

(2) To increase yield through intensive cultivation by proper soil preparation, seed selection, soil improvement, fertilizing, and the employment of insect pests and disease control measures.

(3) To teach economy in the use of seeds, fertilizers, insecticide and fungicide materials, and care of equipments.
(4) Provide plans showing what vegetables to grow, when to plant them, planting distances, fertilizing, etc.
(5) Teach health value and home economy through the consumption of more home grown vegetables.
(6) Conservation of surplus through canning or storages.
(7) The use of family labor in home garden operations; boys, girls and women.

(b) Marketing gardening:
(1) To increase yield per acre, and acreage to plant all starchy, green, leafy and yellow vegetables.
(2) To prepare planting guides for farmers showing periodical planting times and crop production.
(3) To teach farmers value of growing and selecting their own seeds, and not depend on any governmental or private agencies to provide them.
(4) To show importance of soil improvement and fertilizing practices, contour planting and soil erosion control, care and use of farm manure, insects and disease control, and the grading and presentation of the produce for market.

(c) Truck gardening:
(1) Keep farmers informed on:
(a) The transportation situation and facilities to ship their crops to market.
(b) Kinds and varieties of vegetables best adapted to market requirements.
(c) Source of seeds, fertilizers, insecticides and fungicides.
(d) When to plant to get best winter prices for their produce.
(e) Improved cultivation and fertilizing practices for higher yields.

(2) Assist farmers in control of insect pests and diseases.
(a) Providing spraying calendars.
(b) Helping to find repairs for equipments.
(c) Training new workers in vegetable growing practices.
(d) Family assistance in the business.

(3) Market requirements of vegetables.
(a) Encourage cooperation among vegetable growers.
(b) Show proper picking of crops, and the grading and packing of produce for market.

(d) Fruit growing:
(1) Promote the cultivation and care of all kinds of fruit trees on the farm through proper pruning and fertilizing.
(2) Propagation of native and commercial fruit trees by budding and grafting.
(a) To replace old trees.
(b) To establish the farm orchard.
(c) To produce more fruits for the home and local market.
(3) Control of diseases and insect pests.

2. Home ground improvement:

(a) Methods of improving the home grounds:

(1) Provide adequate instruction.
(2) Prepare plans to follow.
(3) Kind of ornamentals to use.
(4) Methods of propagation.

(b) Teach aesthetic and economic values:

(1) Increasing value of property.
(2) Making things more attractive for the family.
(3) Developing habits of good taste.

(c) Improve health conditions.
(d) Social and moral effect.
(e) Cooperation with 4-H club leader to arouse interest of 4-H club boys and girls toward the improvement of home surroundings.

III. Objectives:

The objectives of this plan are briefly as follows: To make it possible for farmers throughout the Island to sustain themselves through their own efforts; to teach them to produce on their farms as much food as possible for their own needs for the improvement of their health through better food habits; to increase crop production through modern agricultural practices, thus supplying the needs of the Island, doing their utmost toward National Defense, and improving their economic conditions, and to keep them interested in their homes, their farms and their communities.

IV. Numerical Goals for 1942:

Items	1941: Results	1942 Goals
A. Major planning and teaching activities:		
1. No. of meetings to train agents on subject-matter	4	15
2. No. of meetings at result demonstrations	103	158
3. No. of method demonstration meetings	534	544
4. No. of result demonstrations	589	450
5. No. of 4-H projects	---	928
6. No. of tours	3	5
7. No. of agents to be assisted in:		
(a) Organizing committees of rural people to study situation	2	5
(b) Servicing planning committees and U. S. Department of Agriculture defense committees with background information and other specialist aid	-	16
(c) Making available to farm people the services of U.S.D.A. action agencies	3	10
(d) Planning coordinated project activities with co-workers and representatives of other government agencies in the county	-	10
(e) Developing plans to be followed in Extension work with 4-H clubs and older youth	8	10
(f) Training 4-H judging and demonstration teams	-	5

Items	1941 Results	1942 Goals
A. Major planning and teaching activities (Cont'd.)		
7. No. of agents to be assisted in:		
(g) Planning, establishing and conducting result and method demonstrations	18	20
(h) Training leaders in subject-matter and Extension methods including group discussions	2	5
(i) Preparing and using circular letters, news articles, exhibits, posters, and other Extension means	-	8
B. Participation of farm people:		
1. No. of adults to take part in major phases	3,426	4,000
2. No. of 4-H club members	911	1,500
3. No. of leaders to be trained	---	20
C. Physical or material results:		
1. Home gardens demonstrations (adults)	276	350
2. 4-H projects in home gardens	986	1,500
3. Total yields of vegetables to grow in 4-H projects	10,633 Bu.	18,000 Bu.
4. Acres of vegetables to be grown for market purposes	5,527	6,000
5. Farmers following fertilizer recommendations	3,526	4,000
6. Farmers following insect pest control measures recommended	2,960	3,000
7. Farmers following disease control measures recommended	2,412	2,500
8. Farmers following soil conservation practices	2,238	2,500

V. Procedure and Teaching Methods:

The project leader will assist the county extension agents and home demonstration agents to determine the local needs of farmers' organizations, 4-H clubs, and individual farmers, and find solutions for them. All teaching and demonstration work will be carried on through both the Extension agents and the home demonstration agent. In the solution of problems they will be led by the specialist in planning and establishing result and method demonstrations to furnish proof of the need of adopting the practices recommended; in developing ways of getting the largest possible number of people to adopt the most modern farm practices, and to obtain adequate records, showing increased net returns and improved conditions with which to measure the progress of the project. Field work will be supplemented by lectures, personal conferences, publications, news articles, radio talks, meetings, tours, educational exhibits, and any other extension means, so as to bring about the adoption of the practices recommended.

VI. Cooperation with other agencies:

(a) Farm Security Administration: The field personnel will be assisted in planning home gardens and home ground improvement for their clients.

(b) Puerto Rico Housing Authority: Assistance in program preparation for crop production.

(c) Agricultural Experiment Station of the University of Puerto Rico: We will receive cooperation in determining methods of control of disease, and in scientific findings relative to crop production.

(d) Agricultural Adjustment Administration: Cooperate in preparation of their program for the benefit of the farmers.

(e) Emergency Crop Loan Office of the Farm Credit Administration: Cooperate in the granting of credit facilities to vegetable growers.

(f) Co-workers of the Extension Service: Cooperate with agronomists in charge of tobacco and subsistence crops, coffee and cotton; the agricultural economist, nutritionist, 4-H project leader, and the publicity division in the development of their plan of work.

(g) Soil Conservation Specialist: In development of soil conservation practices among vegetable and fruit growers.

(h) Vocational Division of the Department of Education: Cooperation in providing information on methods and practices for vegetable crop production in Second Rural Units.

(i) Insular Department of Agriculture and Commerce: Cooperation with farm bureaus for the development of vegetable projects.

VII. Extension Literature and Illustrative Material:

A. Circulars:
1. Guide to the Cultivation of Agricultural Crops for the Home - 10,000 copies
2. The Control of Insect Pests and Diseases of Vegetable Crops - 3,000 copies
3. The Farm Orchard - 3,000 copies
4. Potato growing and marketing - 3,000 copies.

B. Leaflets:
1. Onion Culture - 1,000 copies
2. Stringless Beans - 1,000 copies
3. Lettuce Culture - 1,000 copies
4. The Pot-herbs - 1,000 copies

VIII. Calendar of Work - 1942 (follows)

IX. Outline Map (Included)

X. Projection of Plan through first half of 1943 Calendar Year:

VIII. Calendar of Work 1942

	ITEMS	Summary No. of Days	D	J	F	H	A	M	J	J	A	S	O	N
1.	Training Extension agents and local leaders	15				x	x	x		x	x	x		
2.	Visits to demonstrations	25	x	x	x	x	x					x	x	x
3.	Field meetings at result demonstrations	25	x	x	x	x	x				x	x	x	x
4.	Method demonstration meetings	30	x	x	x	x	x	x		x	x	x	x	x
5.	Food production campaign program	40				x	x	x	x	x	x	x		
6.	Visit and hold meetings at 4-H club members projects	30	x	x	x			x	x	x	x	x		
7.	Planning, establishing and conducting result and method demonstrations	20				x	x	x	x	x	x	x		
8.	Planning coordinated project activities with coworkers and others	15	x	x				x		x		x		
9.	4-H club members short course	9									x			
10.	Extension Service annual conference	6											x	x
11.	Regional agents meetings	9					x				x			
12.	Training 4-H judging and demonstration teams	4									x	x		
13.	Tours	6				x				x	x	x		
14.	Preparing Extension literature and illustrative material	45			x	x	x	x	x	x	x			
15.	Prepare 1942 plan of work	7		x	x									
16.	Study and analysis of final reports of result demonstrations	10							x	x		x	x	x
17.	Write 1941 annual report	10	x	x										